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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/495,447	01/31/2000	Satoru Niwa	1832/40	4868

23838 7590 12/06/2001

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EXAMINER

BURCH, MELODY M

ART UNIT	PAPER NUMBER
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3613

DATE MAILED: 12/06/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/495,447

Applicant(s)

NIWA, SATORU

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 is/are allowed.
- 6) ☐ Claim(s) 1-13, 15-19, 21-24 and 29-32 is/are rejected.
- 7) ☒ Claim(s) 14 and 25-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 15 is objected to because of the following informalities: The term "tto" in line 4 should be changed to --to--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-4, 6-12, 15, 18, 19, 21-23, and 29-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 1. The phrase "of said ignition switch" in the last two lines of claim 1 is unclear. In lines 10-12 of claim 1 the first switch is described as an alternative of at least one of either an ignition switch or a switch which is turned on and off in response to an operation of the ignition switch, therefore it is improper for the phrase in the last two lines of the claim to be limited only to the ignition switch.

Re: claim 15. The phrase "a rear right brake for braking a rear right brake" in lines 12-13 is unclear.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura. Kimura shows in figure 1 an electrically controlled braking system including an electrically controlled brake for braking a wheel of an automotive vehicle, an electric power source device 42, a brake operating member to which element 56 is connected as disclosed in col. 6 line 25, and a brake control apparatus 24 for controlling an electric energy to be supplied from the electric power source device to the brake, for thereby controlling an operation of the brake when the brake operating member is operated, the braking system comprising: a switching device 68,62,56 disposed between the electric power source device and at least one of the braking control apparatus and the brake, wherein the switching device includes a first switch 62 and a second switch 56 which are connected in parallel with each other, the first switch comprising at least one of an ignition switch of the automotive vehicle and a switch which is turned on and off in response to an operation of the ignition switch as disclosed in col. 6 lines 13-15, the second switch being turned on and off in response to an operation of the brake operating member as disclosed in col. 5 lines 23-28, the switching device being turned on for connecting the electric power source device to at least one of the brake control apparatus and the brake, in response to either one of the operations of the ignition switch and the brake operating member.

6. Claims 5 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Brooks. Brooks shows in figures 1 and 2 an electrically controlled braking system

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including an electrically controlled brake or parking brake not actually shown for braking a wheel of an automotive vehicle, an electric power source device 12, a brake operating member (the seat and door to which switches 24 and 26 are connected), and a brake control apparatus 32,33 for controlling an electric energy to be supplied from the electric power source device to the brake, for thereby controlling an operation of the brake when the brake operating member is operated, the braking system comprising: a switching device 18 and 24,26 disposed between the electric power source device and the brake control apparatus, the switching device being turned on for connecting the electric power source device to the brake control apparatus, in response to an operation of the brake operating member (getting up from the seat or opening the door), wherein the switching device includes a plurality of switches in series with each other (18 in series with 24,26).

7. Claims 13, 16, 17, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated Giorgietti et al. Giorgetti et al. show in figures 1 and 2 an electrically controlled braking system including an electrically controlled brake for braking a wheel of an automotive vehicle, an electric power source device 17, a brake operating member 2, and a brake control apparatus or unnumbered brake actuator shown in the area of 6 shown in the area for controlling an electric energy via element 18 to be supplied from the electric power source device to the brake, for thereby controlling an operation of the brake when the brake operating member is operated, the braking system comprising: a switching device 11 disposed between the electric power source device and the brake control apparatus, the switching device being turned on for

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connecting the electric power source device to the brake control apparatus in response to an operation for the brake operating member wherein the electrically controlled brake includes a front rotor shown in the area of 16 rotating with a front wheel 8, a front friction member 6, and an electrically operated front brake actuator 18 for forcing the front friction member onto the front rotor and the electric power source device includes a plurality of electric power sources left and right motors 17 arranged to supply electric energies to the front brake actuator independently of each other.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of Brooks. Frait et al. show in figures 1 and 7 an electrically controlled braking system including an electrically controlled brake for braking a wheel of an automotive vehicle, an electric power source device 86, a brake operating member 25, and a brake control apparatus 12 for controlling an electric energy to be supplied from the electric power source device to the brake, for thereby controlling an operation of the brake when the brake operating member is operated, the braking system comprising: a switching device 26,34a disposed between the electric power source device and at least one of the braking control apparatus and the brake, wherein

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the switching device includes a first switch 34a and a second switch 26 which are connected in parallel with each other, the first switch comprising at least one of a manual switch of the automotive vehicle and a switch which is turned on and off in response to an operation of the ignition switch, the second switch being turned on and off in response to an operation of the brake operating member as disclosed in col. 8 lines 41-45, the switching device being turned on for connecting the electric power source device to at least one of the brake control apparatus and the brake, in response to either one of the operations of the ignition switch and the brake operating member, but does not specifically disclose that the manual switch is an ignition switch. Brooks teaches the use of an ignition switch 18 in connection with an electrical brake control system in figure 1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the manual switch of Frait et al. to have included an ignition switch, as taught by Brooks, in order to provide a means of controlling the initiation of the electric brake control mechanism.

10. Claims 2 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of Brooks as applied to claim 1 and further in view of European Patent to Maron et al. (corresponding to U.S. Patent 5957551 to Maron et al. as an English equivalent throughout the Office Action) and Giorgetti et al. Frait et al., show in figure 1 electrically controlled drum brakes, electrically operated actuators 22 in the form of electromagnets, a plurality of switching devices 90, 94, and electric actuator control device 92, 100. Maron et al. teach in figure 1 the use of electrically controlled disk brakes 14 which inherently consist of a rotating rotor and a friction member.

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It is well known in the art that both drum brakes and disk brakes can be employed to stop or slow movement depending on the braking application. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the drum brakes of Frait et al. with disk brakes, as taught by Maron et al., in order to provide an alternate means of effecting braking action on a rotating wheel.

Also, Giorgetti et al. teaches in figure 1 the use of electric motors 17 as electric brake actuators. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the electromagnetic electric actuators of Frait et al. with electric motors, as taught by Giorgetti et al., in order to provide an alternate means of actuating the electric braking means of the electrically controlled braking system.

11. Claims 3, 4, 18, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view Brooks, as applied to claim 1 and further in view of European Patent to Maron et al.

Re: claims 3, 4, 18, 21, and 22. Frait et al. show in figure 1 electrically controlled drum brakes, electrically operated actuators 22, and electric actuator control device 92, 100. Maron et al. teach in figure 1 the use of electrically controlled disk brakes 14 which inherently consist of a rotating rotor and a friction member actuated to press the rotor.

It is well known in the art that both drum brakes and disk brakes can be employed to stop or slow movement depending on the braking application. Therefore, it

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would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the drum brakes of Frait et al. with disk brakes, as taught by Maron et al., in order to provide an alternate means of effecting braking action on a rotating wheel.

Maron et al. teach in figure 1 the use of electrically operated front brake actuator 12 on the upper right-hand side of the figure and an electrically operated rear brake actuator 12 on the upper left-hand side, a front brake power source 8 on the right-hand side of the figure, and a rear brake power source 8 on the left-hand side of the figure. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system of Frait et al. with a front and rear brake electric power sources, as taught by Maron et al., in order to provide a prevent a total loss of braking capacity at both the front and rear sections of a vehicle in the case of failure of one of the electric power sources. (Re: claim 18)

Frait et al., as modified, teaches the use of a brake control apparatus including a main control device 74, 70 and an actuator control device 92, 100. See Frait et al. figure 1. (Re: claim 21)

Providing a redundant environment in brake applications is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the electrically controlled braking system of Frait et al. to have included electrical power sources in parallel in order to provide an alternative level of redundancy to prevent the loss of brake actuation due to the failure of one of the switching device. (Re: claim 24)

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Examiner notes that communication through local area network as a controller interface is well known in the art. (Re: claim 22)

12. Claims 6-8, 11-12 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of Brooks as applied to claim 1 above, and further in view of Imanaka.

Re: claims 6-8 and 11-12. Imanaka teaches in figure 1 the use a plurality of a plurality of brake control devices 11 and 12 which are commonly known to principally constitute a computer. Imanaka also teaches the use of a plurality of electric power sources labeled power source and battery BDC in figure 1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system of Frait et al. with a plurality of control devices and electric power sources, as taught by Imanaka, in order to provide a level of redundancy in the case of failure of one of the control devices or electric power sources. Also, in view of the teachings of Imanaka, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system with at least three control devices in order to provide a particular level of redundancy dictated by the particular braking application.

Re: claim 29. Imanaka teaches in the abstract the use of a mechanical friction brake which is brought into a connecting state when an electrical abnormality with the electric brake occurs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Frait et al with a mechanical operated brake triggered to a connected state during abnormal states in the

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electric brake, as taught by Imanaka, in order to provide a reliable alternate means of effecting braking action of a wheel in the event of failure of the electric brake. This expedient is another of example of providing a level of redundancy in the braking system.

13. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of Brooks in view of Imanaka as applied to claims 1 and 6 above, and further in view of JP 5-158742. JP 5-158742 teaches in lines 1-3 of the constitution provided with the English translation of the abstract the use of devices for detecting an abnormality of the actuator control device. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system of Frait et al., as modified, with an abnormality detecting device, as taught by JP 5-158742, in order to provide a means of securing the safe operation of the brake system.

14. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frait et al. in view of Brooks in view of European Patent to Maron et al. as applied to claims 1 and 21 above, and further in view of JP 5-158742. JP 5-158742 teaches in lines 1-3 of the constitution provided with the English translation of the abstract the use of devices for detecting an abnormality of the actuator control device. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the electrically controlled braking system of Frait et al., as modified, with an abnormality detecting device, as taught by JP 5-158742, in order to provide a means of securing the safe operation of the brake system.

Allowable Subject Matter

15. Claim 15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

16. Claims 14, 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Claim 20 is allowed.

Response to Arguments

18. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents: 4561527 to Nakamoto et al. and 4020455 to Irimajiri et al. teach the use of switches arranged in parallel in electric brake systems.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Schwartz can be reached on 703-308-0576. The fax phone

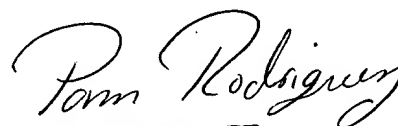
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numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

mmb
December 3, 2001

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12/3/01



PAM RODRIGUEZ
PRIMARY EXAMINER

12/3/01